

## **REMARKS**

In response to the above-identified Final Office Action, Applicants amend the Application and seek reconsideration thereof. In this response, Applicants amend claims 1-24 and add claims 25-28. Applicants do not cancel any claims. Accordingly, claims 1-28 are pending in this Application.

### **I. Interview**

In the interview conducted with Examiner Perez on August 31, 2005, the Examiner indicated that claims defining a method or apparatus that transmits signals having an omnidirectional pattern when an error is detected in a received signal, and transmits signals with a directivity corresponding to the directivity of received signals when the method or apparatus does not detect an error in the received signals would be distinguishable over the references of record. Accordingly, to enable Examiner Perez to have adequate time to review the prior art, applicant is filing an RCE request with this Preliminary Amendment. If there are any questions the undersigned attorney is available to respond.

### **II. Background of the Invention**

The present invention is directed to a mobile communication device that can be used in adaptive array antennas, and more particularly, to an improvement that addresses the problems that can occur with weak electric fields, interference, and loss of synchronization when the mobile communication device does not receive transmitted signals properly from a base station. In such circumstances, if the mobile communication device fails to properly receive signals, it will then not be capable of calculating a proper weight vector from the received signals to generate a directivity pattern towards the intended base station. Accordingly, neither the mobile

communication device nor the base station can provide appropriate directivity patterns towards the other device.

The present invention provides a specific solution as set forth in the claims for addressing this problem in an adaptive array method. The invention is capable of detecting an error in the reception signal from the transmitting source and then controls the transmission unit in the mobile communication device to provide an omnidirectional pattern that can be utilized with an antenna having the largest antenna gain among the plurality of antennas that are available. As a result, the present invention increases the probability of sending signals that can be appropriately received by the intended base station, and an interactive detection, recognition and remedial signal processing is provided, as set forth in the current claims. As can be readily appreciated, by adapting the mobile communicational device to address these problems, and utilizing a omnidirectional transmission pattern from the appropriate antenna, not only will the performance characteristics of the mobile communicational device using this system be improved, but there will be less interference with other base stations resulting from erroneous high directivity transmission towards such base stations.

### **III. Claims Rejected Under 35 U.S.C. § 103**

The Office Action rejects Claims 1-8 and 13-20 as being unpatentable over U.S. Patent No. 5,710,995 issued to Akaiwa et al. ("*Akaiwa*") in view of U.S. Patent No. 6,297,780 issued to Kirisawa ("*Kirisawa*"). Applicants amend independent claims 1, 5, 13, and 17.

To render a claim obvious, the prior art references, when combined, must teach or suggest every limitation of the rejected claim (*See MPEP § 2143*). Moreover, the Court of Appeals for the Federal Circuit states:

Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. See, e.g., *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed.Cir.1988) (describing “teaching or suggestion or motivation [to combine]” as an “essential evidentiary component of an obviousness holding”); *In re Rouffet*, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed.Cir.1998) (“the Board must identify specifically ... the reasons one of ordinary skill in the art would have been motivated to select the references and combine them”);

*In re Anita Dembiczak*, 50 USPQ2d 1614 (Fed. Cir. 1999).

Among other elements, amended claim 1 defines a mobile communication terminal comprising “transmission control means for controlling [a] transmission means, wherein when the detection means detects [a] reception error in [a] reception signal the transmitted transmission signal is [an] omnidirectional transmission signal and when the detection means does not detect [a] reception error, the transmission signal is transmitted in the directivity pattern formed in reception.” Applicants submit the combination of *Akaiwa* and *Kirisawa* fails to teach or suggest at least these elements of claim 1.

*Akaiwa* is directed to the basic structure of a mobile communication terminal and method for performing reception and transmission within an adaptive array method. It recognized the use of a plurality of antennas and a reception unit for forming a directivity pattern to receive a signal. The Office Action contended that the mobile communication terminal had the capacity of detecting a reception error in the reception signal. Notably, the Office Action admitted that *Akaiwa* does not teach or suggest the method proposed by the present invention. However, the Office Action relies on *Kirisawa* to cure the defects of *Akaiwa*. Specifically, the Office Action contends that *Kirisawa* is applicable to suggest a modification of the *Akaiwa* mobile

communication terminal to increase the likelihood of a transmitted signal to reach its desired destination.

*Kirisawa* offers a solution directed to a satellite system that presumably can address the different relative elevational angles of satellites. To accomplish this, one of two transmission antennas, each of which has different (i.e. horizontal or vertical) directivities from each other, is selected to transmit a signal (See Column 4, Lines 9-15, and Figure 7). Notably, Column 4 does mention that more than two antennas can be utilized. The system monitors reflected radio waves from the antenna to determine whether or not an obstacle exists in the direction of the antenna. A predetermined threshold value is utilized to measure the strength of the reflected signal and to activate a switch circuit or selector circuit to select between one or the other antenna based upon the feedback of radio waves reflected from an interference such as a human, wall, building, etc. Notably, the helical antenna apparatus of Figure 2A has only two distinct directivities, and *Kirisawa* indicates that the prior art omnidirectional radiation pattern would not be implemented because of its low gain. Thus, *Kirisawa* suggests transmission of a radio wave by selectively using an antenna that has directivity in a horizontal plane and an antenna that has directivity in a vertical plane.

By contrast, claim 1 defines a mobile communication terminal that transmits a signal to a base station in a directivity pattern corresponding to the directivity pattern of a signal received by the mobile communication terminal when there is not an error in the received signal, and transmits a signal including an omnidirectional pattern when there is an error in the received signal. Thus, the combination of *Akaiwa* and *Kirisawa* fails to teach or suggest all of the elements of claim 1.

The failure of the combination of *Akaiwa* and *Kirisawa* to teach or suggest all of the elements of claim 1 is fatal to the obviousness rejection. Therefore, claim 1 is not obvious over *Akaiwa* in view of *Kirisawa*. Accordingly, Applicants respectfully request withdrawal of the rejection of claim 1.

Claims 2-4 either directly or indirectly depend from claim 1 and include all of the elements thereof. Therefore, Applicants submit claims 2-4 are not obvious over *Akaiwa* in view of *Kirisawa* at least for the same reasons as claim 1, in addition to their own respective features. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 2-4.

In addition, Applicants submit independent claims 5, 13, and 17 each include elements similar to claim 1, as discussed above. Therefore, Applicants submit independent claims 5, 13, and 17 are not obvious over *Akaiwa* in view of *Kirisawa* at least for the same reasons as claim 1. Accordingly, Applicants respectfully request withdrawal of the rejection of independent claims 5, 13, and 17.

Moreover, Claims 6-8, 14-16, and 18-20 either directly or indirectly depend from claims 5, 13, and 17, respectively, and include all of the elements thereof. Therefore, Applicants submit claims 6-8, 14-16, and 18-20 are not obvious over *Akaiwa* in view of *Kirisawa* at least for the same reasons as claims 5, 13, and 17, in addition to their own respective features. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 6-8, 14-16, and 18-20.

The Office Action further rejects claims 9-12 and 21-24 as being unpatentable over the *Akaiwa* in view of *Kirisawa*, and and in further view of U.S. Patent No. 6,285,893 issued to Keirinbou (“*Keirinbou*”). Applicants amend claims 9 and 21. Notably, Applicants submit that independent claims 9 and 21, and each of their respective dependent claims (i.e., claims 10-12 and 22-24) include elements similar to claim 1, as discussed above.

The Office Action contends that in the related art of portable radio devices with a plurality of antennas, *Keirimbou* cures the defects of *Akaiwa* and *Kirisawa* by disclosing execution of a program by a computer to implement the method suggested by the combination of *Akaiwa* and *Kirisawa*. Applicants have discussed of the failure of the combination of *Akaiwa* and *Kirisawa* to teach or suggest all of the elements of claim 1. Therefore, Applicants submit the combination of *Akaiwa* and *Kirisawa* fails to teach or suggest all of the elements of claims 9-12 and 21-24. Moreover, Applicants submit *Keirimbou* fails to cure the defect of *Akaiwa* and *Kirisawa* since the Office Action does not cite *Keirimbou* for teaching or suggesting “transmission control step for controlling [a] transmission means, wherein when [a] detection step detects [a] reception error in [a] reception signal the transmitted transmission signal is [an] omnidirectional transmission signal and when the detection step does not detect [a] reception error, the transmission signal is transmitted in the directivity pattern formed in reception” as recited in claims 9-12 and 21-24. Furthermore, Applicants have reviewed *Keirimbou* in its entirety and cannot find any sections disclosing such. Therefore, *Akaiwa* in view of *Kirisawa*, and in further view of *Keirimbou* fails to teach or suggest all of the elements of claims 9-12 and 21-24.

The failure of the combination of *Akaiwa*, *Kirisawa* and *Keirimbou* to teach or suggest all of the elements of claims 9-12 and 21-24 is fatal to the obviousness rejection. Therefore, claims 9-12 and 21-24 are not obvious over *Akaiwa* in view of *Kirisawa*, and in further view of *Keirimbou*. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 9-12 and 21-24.

**CONCLUSION**

In view of the foregoing, it is believed that all claims now pending are in condition for allowance. A Notice of Allowance is earnestly solicited at the earliest possible date. If the Patent Office believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (714) 427-7420.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 19-2814 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly extension of time fees.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to the Commissioner for Patents, Mail Stop RCE, P.O. Box 1450, Alexandria, VA 22313-1450 on November 11, 2005.

By: Sharon Farnus

Sharon Farnus

Signature

Dated: November 11, 2005

Very truly yours,

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